

# **Spring & Summer Weather Hazards**

**Cindy L Howell**

**Fort Rucker Wx Operations**

# Services

- MEF / DD 175-1
- WWAs
- Automated/Augmented Observing
- PMSV/WIF
- Climatology
- Seasonal Weather Briefings
- Everything but the kitchen sink

# Hours of Operation

## → Observing

→ 24/7 (automated)

## → Forecasting

→ 01L Monday - 24L Saturday (closed Sundays and federal holidays)

→ 06L-14L Monday - Friday @ KLOR

## → 26 OWS contact info

→ COMM 318-529-2651/2652/2653

→ DSN 331-2651/2652/2653

# Specification/Amendment Criteria

26 OWS	NWS	FRWXOPS
$\geq 1500 / 3$	$\geq 3000 / 5$	$\geq 1000 / 3$
$< 1500 / 3$	$< 2000 / 3$	$< 1000 / 3$
$< 600 / 1 \frac{1}{2}$	$< 1000 / 3$	$< 700 / 2$
$< 200 / 1/2$	$< 600 / 2$	$< 600 / 1 \frac{1}{4}$
	$< 200 / 1/2$	$< 500 / 1$
		$< 200 / 1/4$

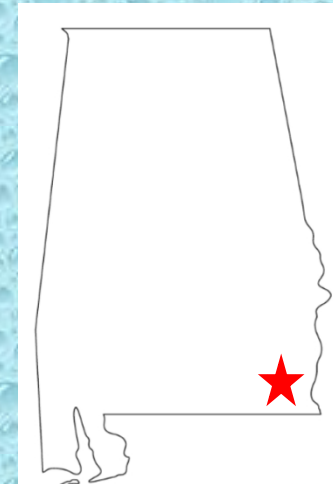
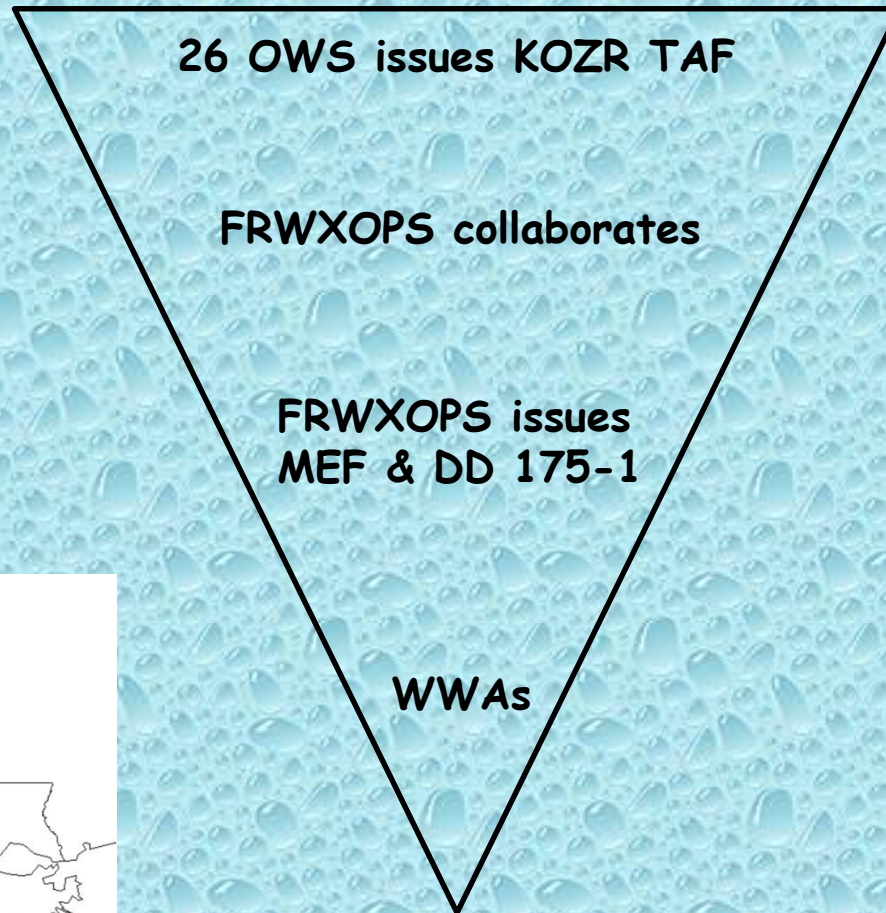
Standard AF  
criteria

Standard criteria

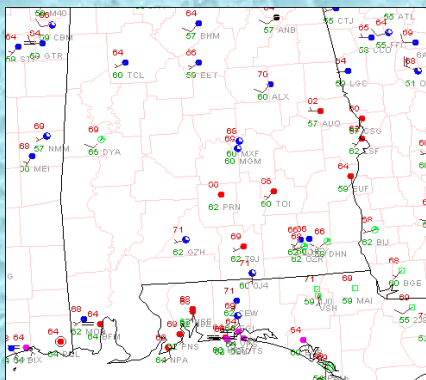
Customer/Aircraft  
requirements

**Be careful when shopping!**

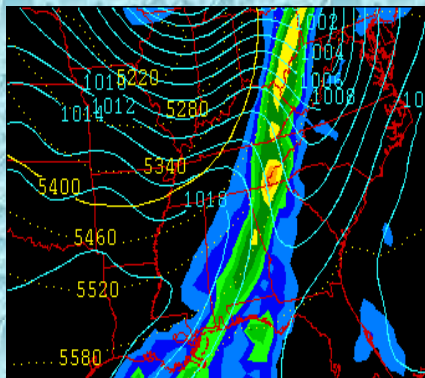
# The Partnership



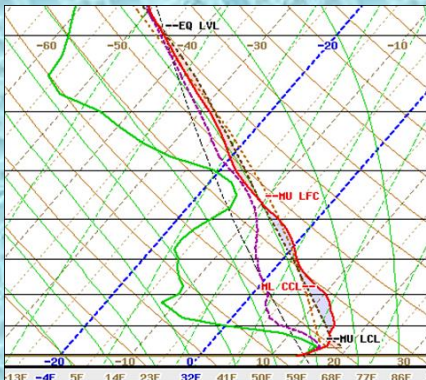
# The Process



Obs

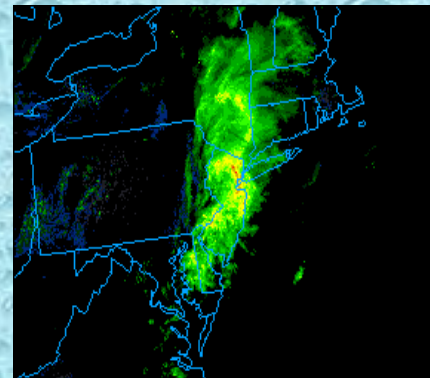


# Models

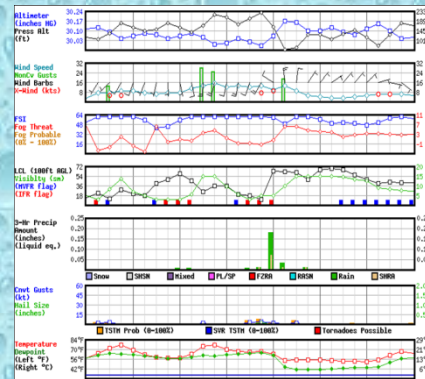


# Numerics

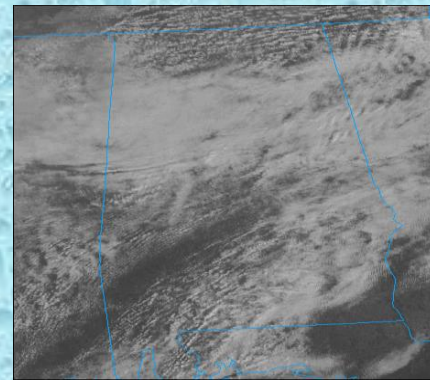
6TH WEATHER FLIGHT									
MISSION EXECUTION FORECAST									
DATE:	11 Mar 10	VALID PERIOD:	AM (1200Z - 1800Z)	ISSUE TIME	11/ 10:45	Briefing: DR, AB			
SOLAR & LUNAR DATA (all times are LOCAL)									
Sunrise	Sunset	EENT	Moonrise	Moonset	Azimuth	Elevation	% Illum		
11/ 0558L	11/ 1748L	11/ 1841L	11/ 0330L	11/ 1418L	76 °	-51 °	16 %		
FLIGHT LEVEL WINDS & TEMPS (all heights are MSL)						MIN FZ LVL: 10			
FLT LEVEL	WIND	TEMP	FLT LEVEL	WIND	TEMP				
010	120ZS KT	+13 C	050	160ZS KT	+07 C				
020	130ZS KT	+12 C	060	170ZS KT	+07 C				
030	150ZS KT	+11 C	070	180ZS KT	+05 C				
040	160ZS KT	+09 C	080	180ZS KT	+04 C				
FLIGHT HAZARDS (all heights are MSL)									
TURBULENCE (Category 1 Aircraft)			CONV LOT		SFC-040				
ICING			NONE						
THUNDERSTORMS			BOID		MT 400 GOLF COAST				
LOW LEVEL WIND SHEAR			NONE						
KOZR & AREA FORECAST DATA									
	MAX TEMP	MIN TEMP	MIN ALSTG	MAX PA	MAX DA	MIN CIG	MIN VIS	MIN WX	
KOZR	18C (64F)	15C (59F)	29 69	520 FT	1,220 FT	005	SSM	SHRA	
AREA	19C (66F)	15C (59F)	29 69	720 FT	1,670 FT	005	SSM	-TSRA	
AREA FORECASTS (all heights are AGL)									TS Coverage
GOLDFISH									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
VANGUARD									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
VANGUARD C									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
VANGUARDS									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
HAWK									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
BEARCAT									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
FIXED WING									
AME#1 at 1530Z	00/05G-WKT TBM BKN05 ISOLD 850-833Z 5SM-SHRA BKN005 OVC015 AFT 6Z: 00/05G-WKT TBM SCT075 BKN044 ISOLD 850-833Z BKN05								
PM PLANNING DATA FORECASTS (all heights are AGL) - 1000-1800Z LOCAL TIME									
AREA FORECAST	Goldfish	Vanguard N	Vanguard C	Vanguard S	Hawk	Bearcat	Fixed Wing		
CONDITION	IFR TL 19Z	IFR TL 20Z	IFR TL 19Z	IFR TL 19Z	IFR TL 20Z	IFR TL 19Z	IFR TL 19Z	IFR TL 19Z	IFR TL 19Z
PM KOZR MAX TEMP 2/C									
PM KOZR MAX PA 140FT									
CONTACT 6TH WEATHER FLIGHT									
FORECASTER PHONE			PMST				FAK		
(334) 255-8385 (DSN 558-8385)			VHF 134.1 UHF 348.8				(334) 255-8521 (DSN 558-8521)		



# PIREPS



TAFS



# SIGMETs

# Products

AM	PM	N1
Issued: 0500L	Issued: 1045L	Issued: 1715L
Valid: 0630-1300L	Valid: 1300-1930L	Valid: 1930-0230L
MEF	MEF	MEF
DD 175-1	DD 175-1	DD 175-1
Continuation Sheet	Continuation Sheet	Planning Data
Planning Data	Planning Data	

## → Dissemination

- Web page
- Post to Facebook
- Fax to Ops Section

# Products

- Grid lines on the MEF
  - More flexibility in forecast areas
  - Maximize training time

WEST OF GRID LINE 70: 12003KT 1/2SM FG OVC 002

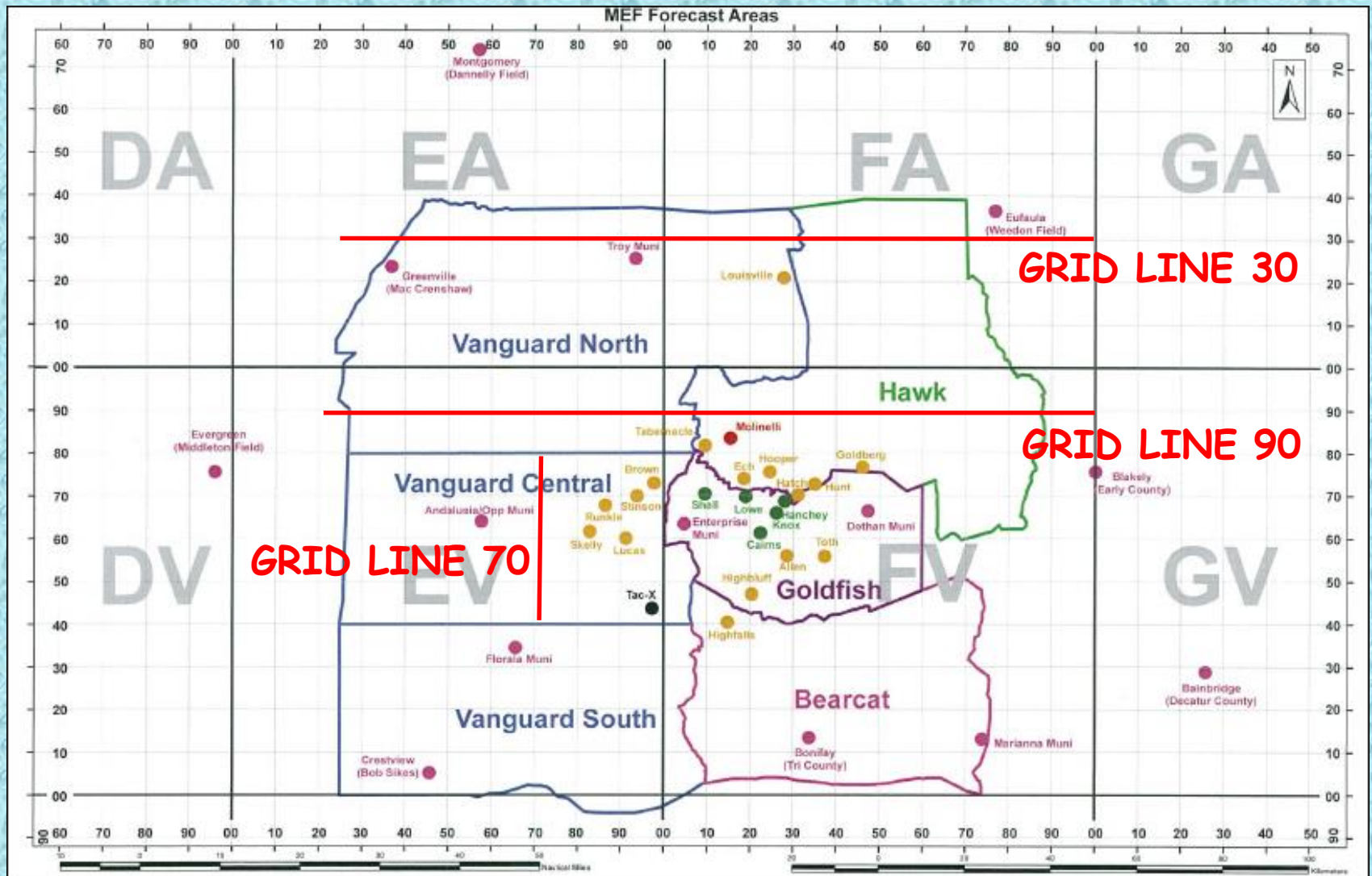
AFT 1330Z: 12003KT 3SM BR BKN005

AFT 1500Z: 12005KT 7SM FEW008 BKN020

EAST OF GRID LINE 70: 12003KT 3SM BR SCT002 BKN050

AFT 1330Z: 12003KT 7SM SCT050

# Products



# Products

## → VCTS

- Better articulate probability and confidence
- Reduce/limit TEMPO lines to higher storm threats
- Does NOT mean predominant thunderstorms

Coding	TS Probability	Coverage
No thunderstorms	Unlikely (10% or less)	None
VCTS	Low Probability (10-30%)	ISOLD
TEMPO	Moderate-High Probability (≥30%) Timing confidence low	FEW or greater
Predominant	High Probability (≥ 50%)	FEW or greater

# Products

DEST / ALTN KOZR	Z TO 1130	Z 1530	21009	7	SCT020 SCT035 BKN200	30.00	INS
DEST / ALTN FROM	Z TO 1530	Z 1700	21012	7	VCTS SCT020 BKN035 OVC200	29.97	INS
DEST / ALTN TEMPO	Z TO 1700	Z 1800	VRB15G25	1/2	TSRA OVC008		INS

- ➔ Low probability of TS from 1530-1700Z
- ➔ Moderate-high probability of TS from 17-18Z

DEST / ALTN KOZR	Z TO 1800	Z 2100	22012	7	SCT020 OVC250	29.99	INS
DEST / ALTN FROM	Z TO 2100	Z 2200	22012G18	7	VCTS BKN020 OVC250	29.98	INS
DEST / ALTN FROM	Z TO 2200	Z 0030	VRB15G28	1/4	+TSRA OVC012	29.96	INS

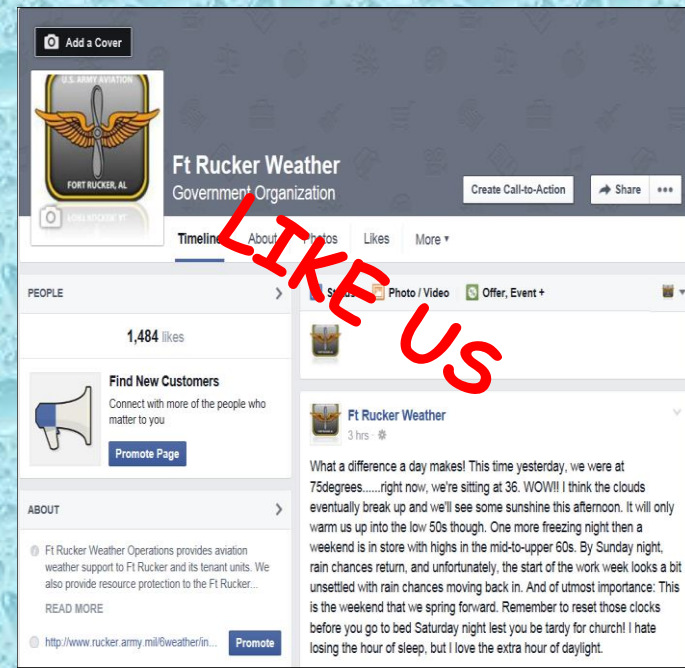
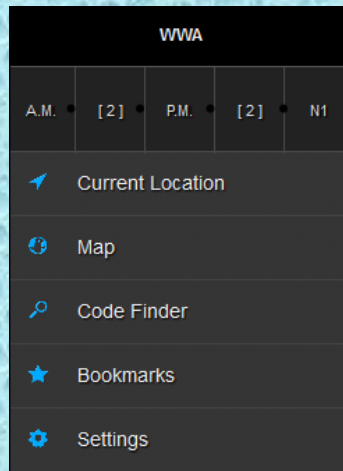
- ➔ Low probability of TS from 21-22Z
- ➔ High probability of TS from 22-0030Z

# Services

## GRAB OUR APP



AM MEF AMENDED TO KEEP GOLDFISH IFR UNTIL 17Z AND IMPROVE NORTH AREAS TO VFR REMAINDER OF AM PERIOD.



# Services

## → WIF

→ 348.8

→ Recorded loop

→ Detailed information about MEF AMDs

→ Hourly updates/void times

# Services

Sensor Area Weather Satellite Imagery Radar Imagery MEF Local Radar Tropical Shell TMOS Molinelli TMOS

Viewer - WWA

XML

Location ID	Type	ID	Issued	Status	Criteria	Valid
KOZR	-	-	-	-	-	-
KTOI	-	-	-	-	-	-
KHEY	-	-	-	-	-	-
KLOR	-	-	-	-	-	-
KSXS	-	-	-	-	-	-
KFHK	-	-	-	-	-	-
19AL	-	-	-	-	-	-

<https://owsjet26.us.af.mil/portal/private/GuestFtRucker>

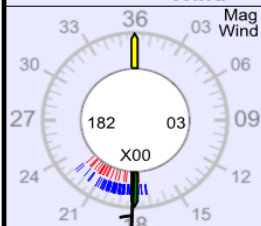
Automated Sensor Display

XML

KOZR RWY 18:KOZR

2014-02-19 14:58:09 Z

## Wind



Active: 18	Mag	True	KTS
Current Wind	182	179	03
Gust	2-min X-Wind	02	
2-min Wind	Avg	Min	Max
Direction	205		
Speed	03		
Variability	176	V	227
DIR	SPD	TIME	
1-Hr PKWIND	166	08	14:06

## Clouds

Vert Vis	OCTAS	FT	Base HGT
CL 1	7	BKN	300 FT
CL 2	8	OVC	800 FT
CL 3			FT
CL 4			FT
CL 5			FT

## WX/Visibility

Present WX	1-min avg	10-min avg	RVR-TD	RVR-RO
	10	SM	9999	m
	10	SM	9999	m
		FT		m
		FT		m

## Precipitation (in)

Rate/Hr	0.00	RAIN	SNOW	RAIN	SNOW
01-Hr			06-Hr		
03-Hr			24-Hr		

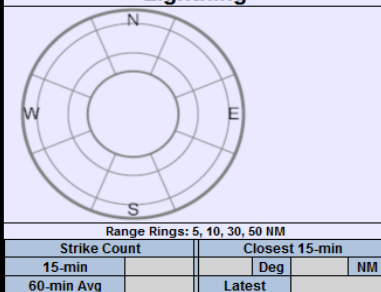
## Temperature

	Current				24-Hr Max-Min			
Tmp	17	C	63	F	24	C	13	C
Dpt	17	C	63	F	17	C	12	C
Dpd	00	C	00	F				
	RH				100	%		
	Heat Index					C		F
	Wind Chill					C		F

## Pressure

ALSTG	30.14	inHg	1020.7	mb
Stn Prs	29.823	inHg	1009.9	mb
SLP	30.14	inHg	1020.8	mb
PA/DA	91	FT	614	FT
3-Hr Chg	0.2	mb		Trend

## Lightning



## Observation

METAR KOZR 191458Z AUTO 20003KT 10SM BKN003 OVC008 17/17 A3014 RMK AO2 SLP208 T01720172 55000 RVRNO

## TAF

TAF AMD KOZR 1914/2014 20009KT 9999 BKN002 QNH3003INS  
BECMG 1917/1918 24012G18KT 9999 SCT010 QNH3008INS  
BECMG 1923/1924 19006KT 9999 BKN025 QNH3001INS  
BECMG 2003/2004 20006KT 4800 BR BKN004 QNH3006INS TX24/1921Z  
TN15/2013Z AMD 191446

## Warnings, Watches, and Advisories

Warnings

Watches

Advisories

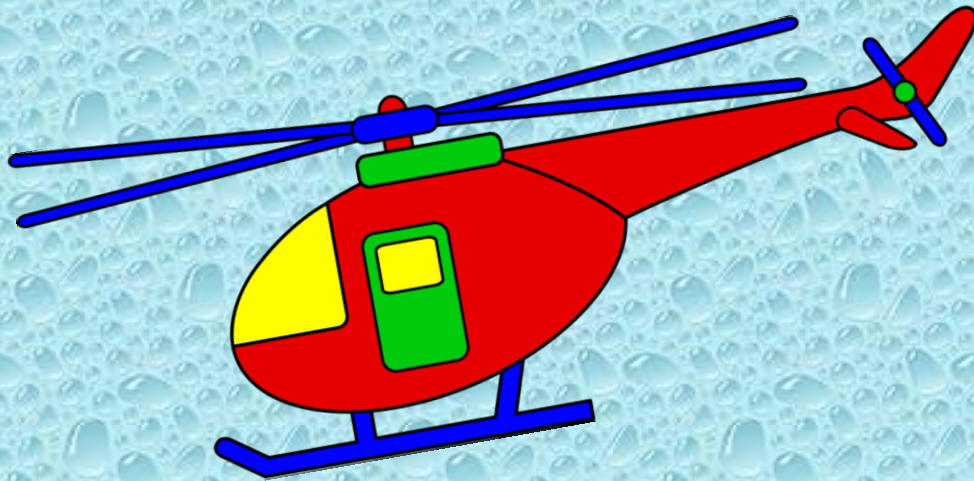
Low IFR (<500/1)

Low IFR (<500/1)

# In The Works

- PMSV capability at Lowe Wx
  - Working with NAVAIDS and Freq Manager
  - Summer 2015

# PIREPs

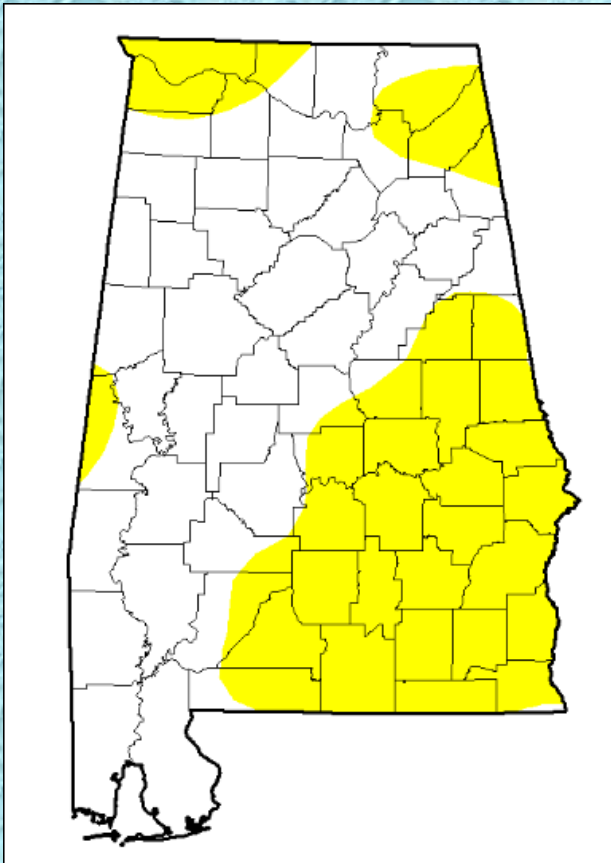


- Large LFA/few obs
- Critical during wx
- May be used to amend the MEF/-1
- PMSV Freq: 134.1

# Climatology

	Max Temp	Min Temp	Direction	Speed	Precip
Jan	59	39	N	5	4.79
Feb	63	42	N	5	5.07
Mar	70	48	NW	5	5.62
Apr	78	55	NW	4	4.17
May	84	63	NE-E	4	3.69
Jun	89	70	S-SW	4	4.85
Jul	90	72	SW	4	5.19
Aug	90	72	NE-E	3	4.43
Sep	86	68	NE-E	3	3.97
Oct	78	56	NE-E	4	3.37
Nov	69	47	N	4	3.50
Dec	62	41	N	5	4.25

# Drought Monitor



## Intensity:

D0 - Abnormally Dry  
 D1 - Moderate Drought  
 D2 - Severe Drought

D3 - Extreme Drought  
 D4 - Exceptional Drought

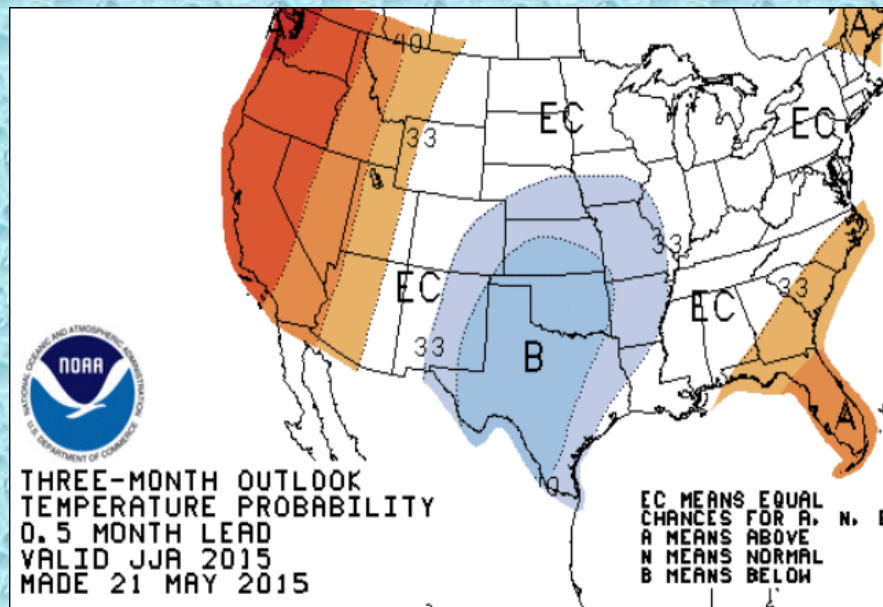
**2015 Rainfall:**  
**KOZR: 20.77"**  
**KHEY: 22.28"**  
**KLOR: 23.31"**

**Normal YTD: 23.34"**

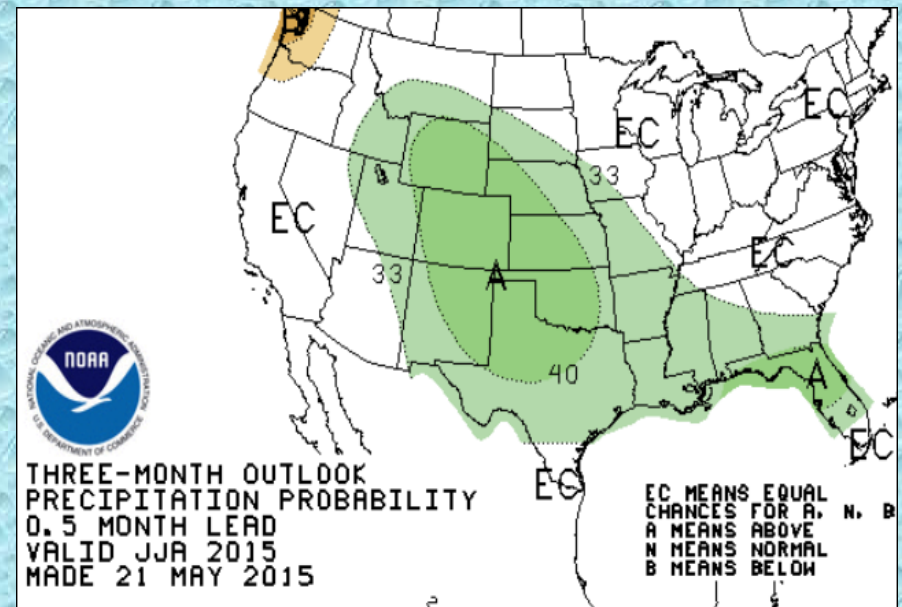
**19 May 15**

# Looking Ahead

## June-July-August

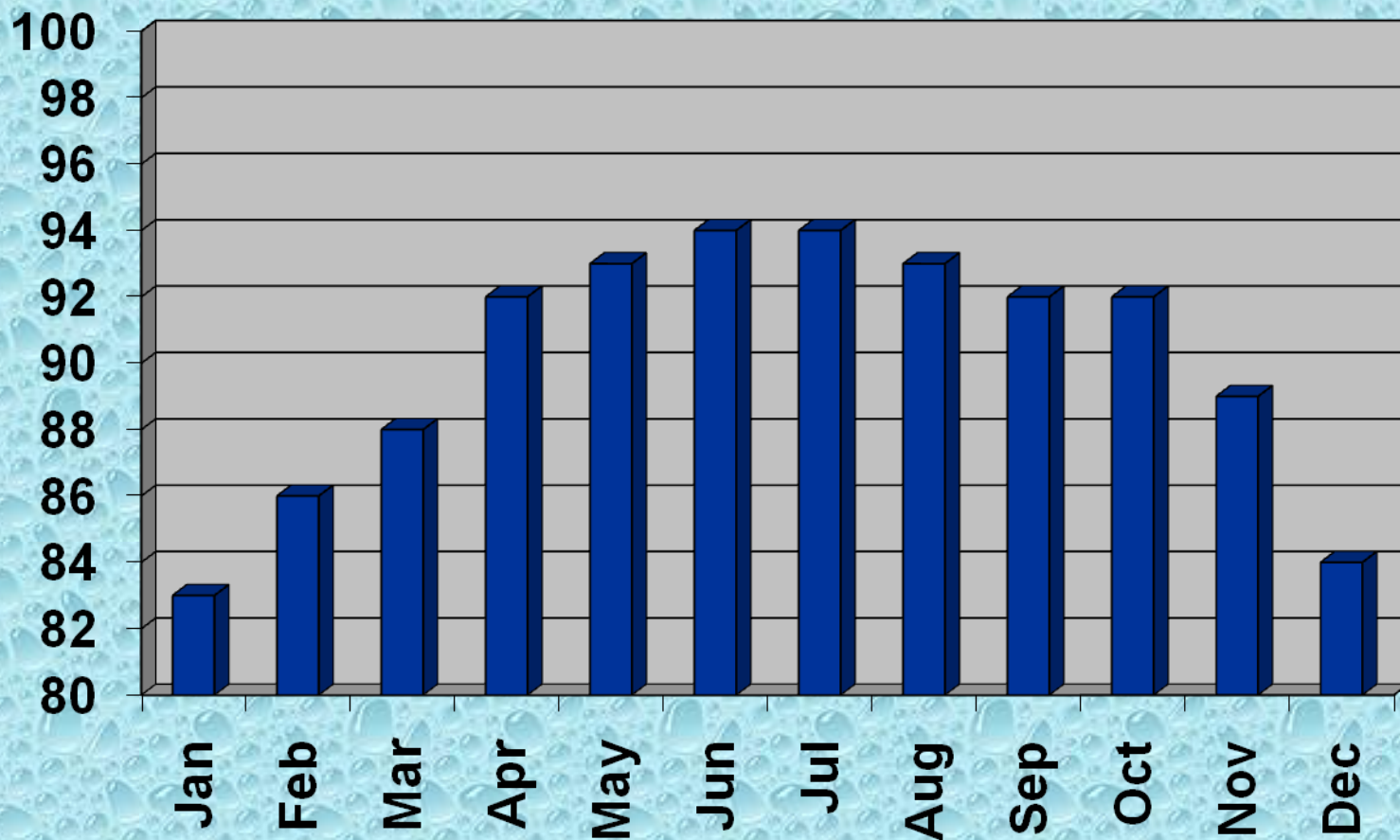


Above avg temps

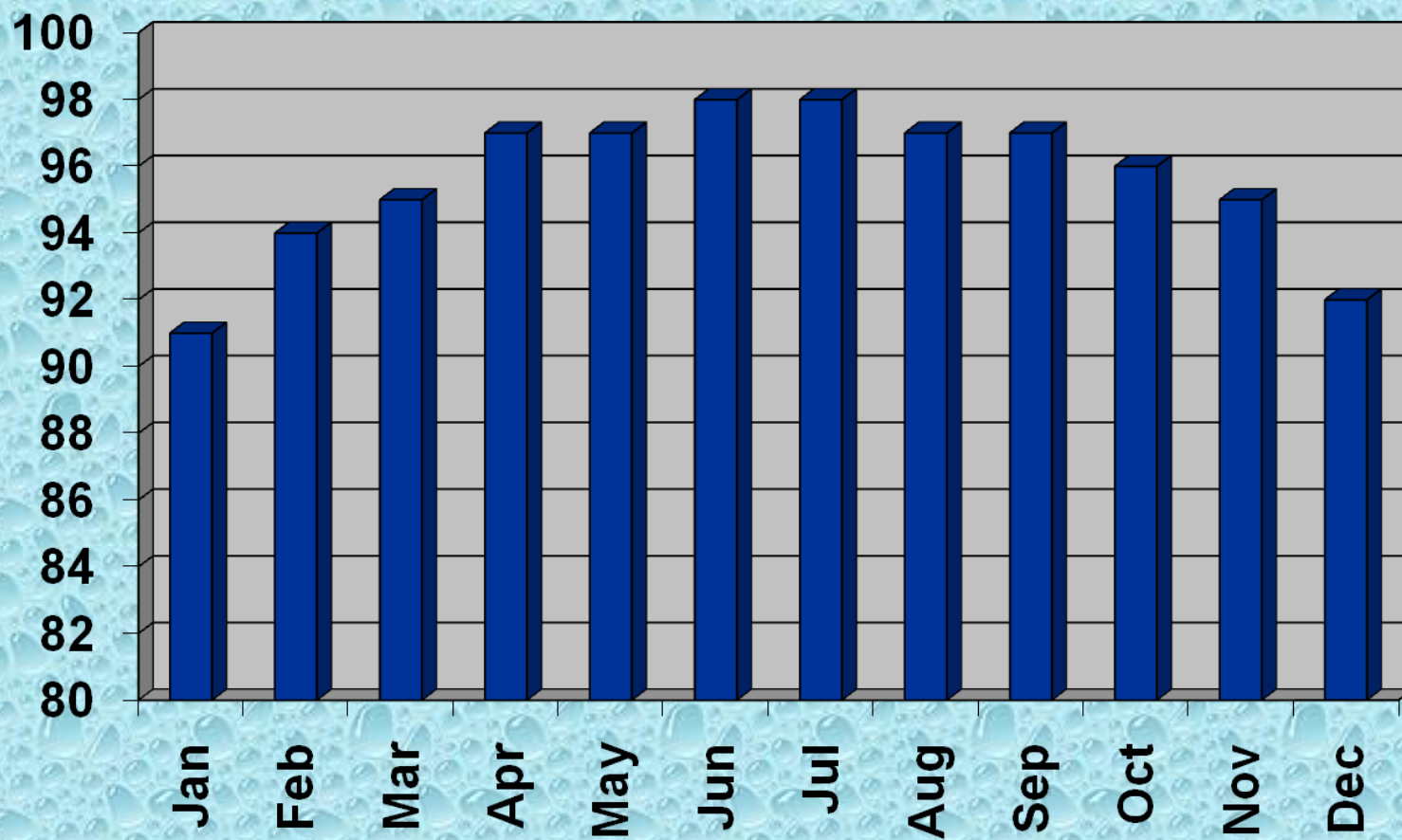


Above avg precip

# Percent $\geq 1000/3$



# Percent $\geq 500/1$



# Seasonal Weather Hazards

→ Spring-Summer

→ Thunderstorms

→ Turbulence

→ Tornadoes

→ Hurricanes

# Thunderstorms

MICROBURSTS

SVR ICING



HEAVY PRECIP

SVR TURBC

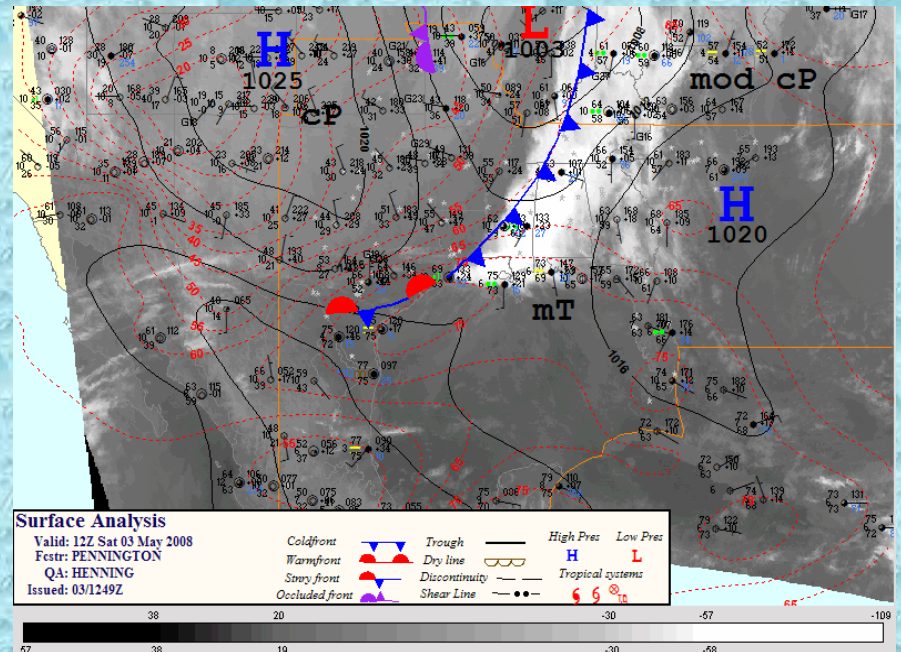
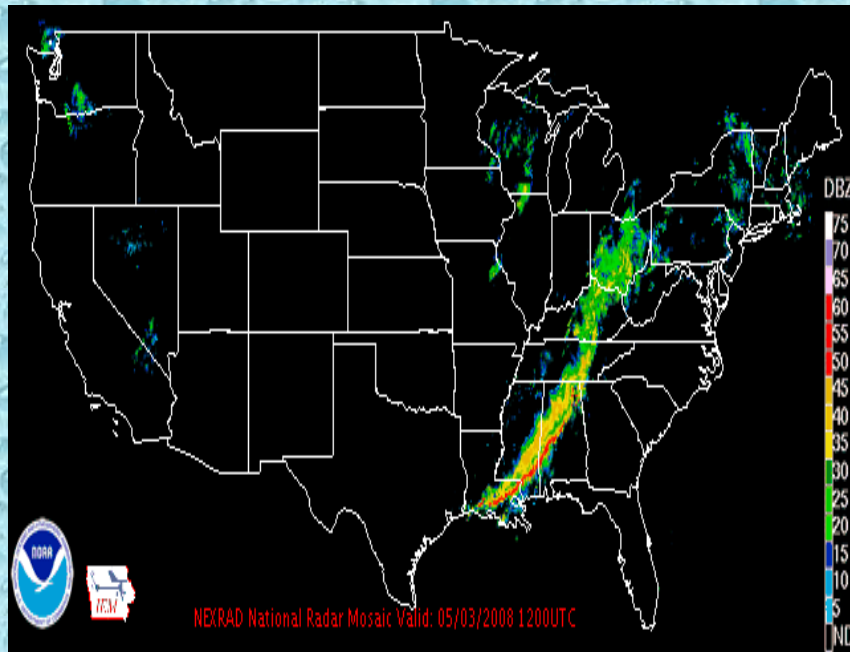
LIGHTNING

LLWS

HAIL

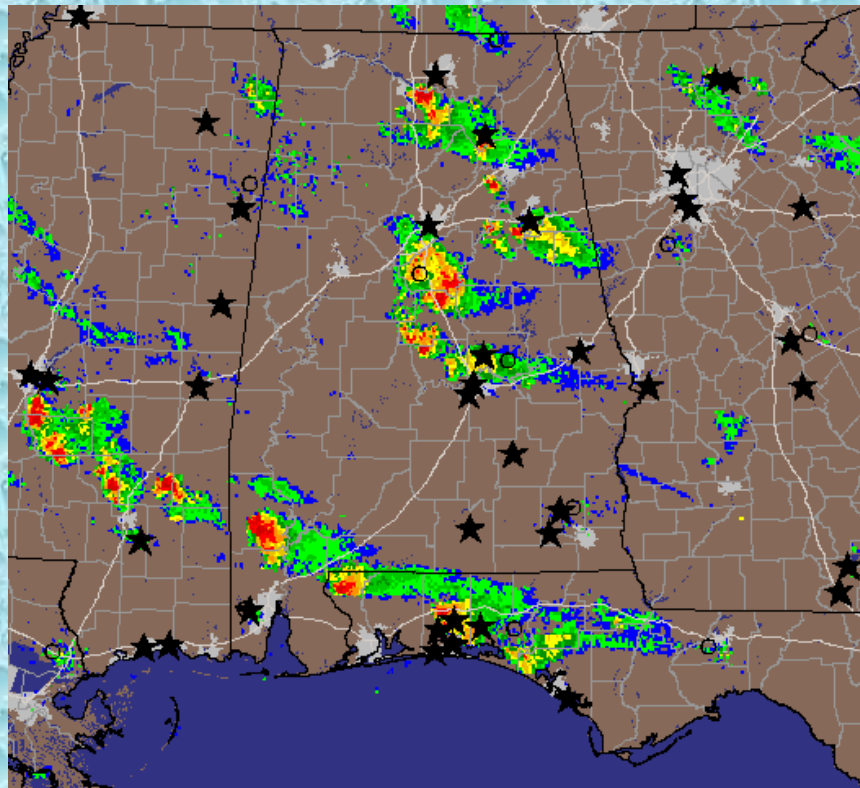
# Spring Patterns

- Cold fronts / Pre-frontal squall lines
- Often turn severe

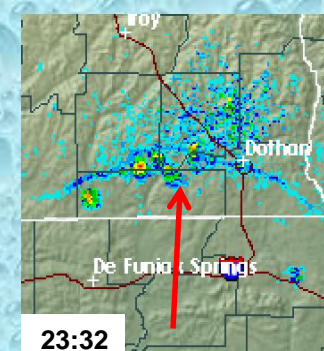
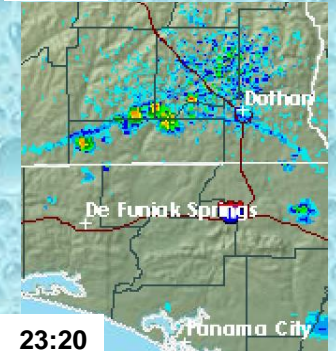
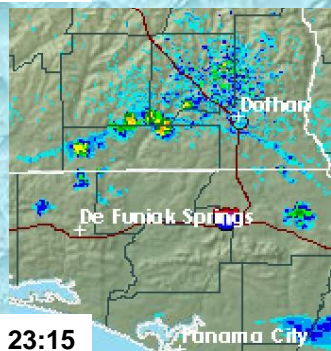
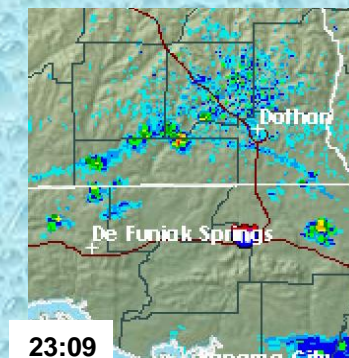
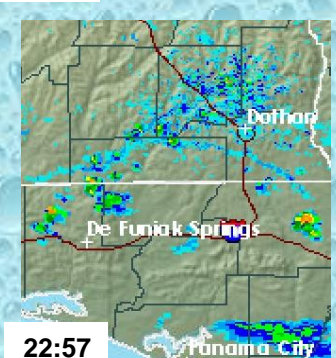
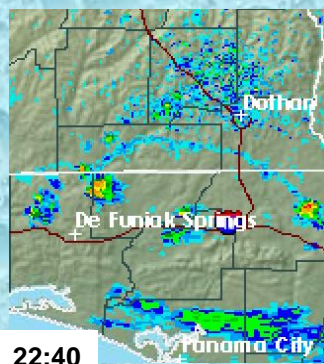
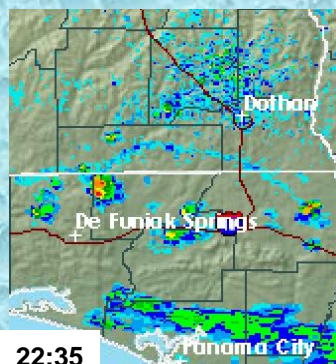
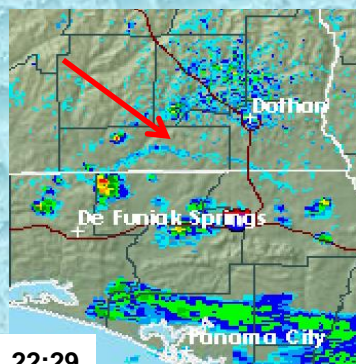


# Summer Patterns

- ➔ Bermuda High
- ➔ Sea Breeze

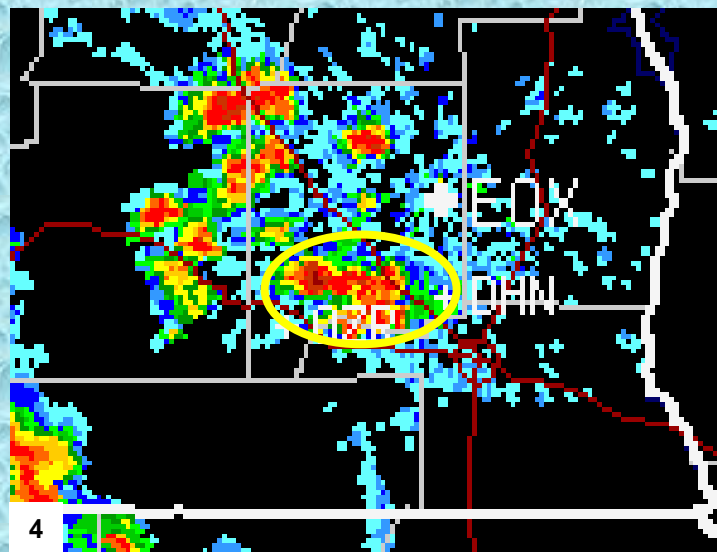
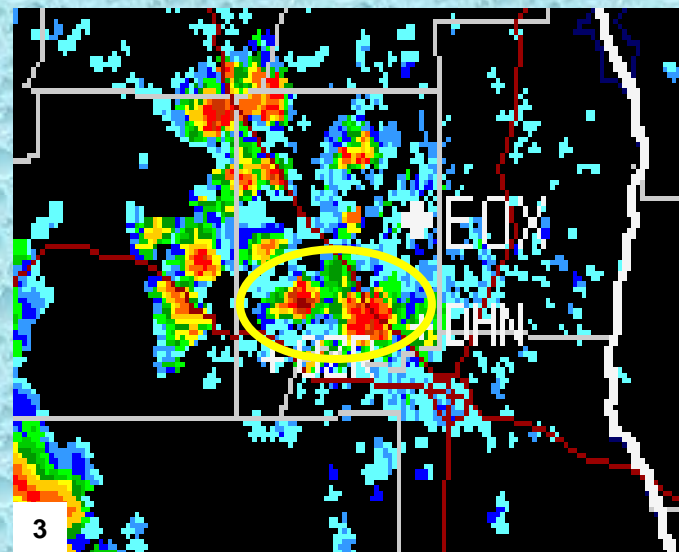
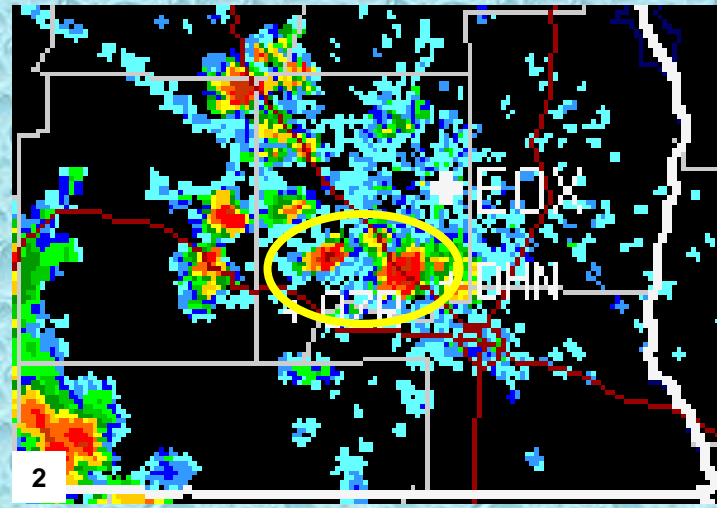
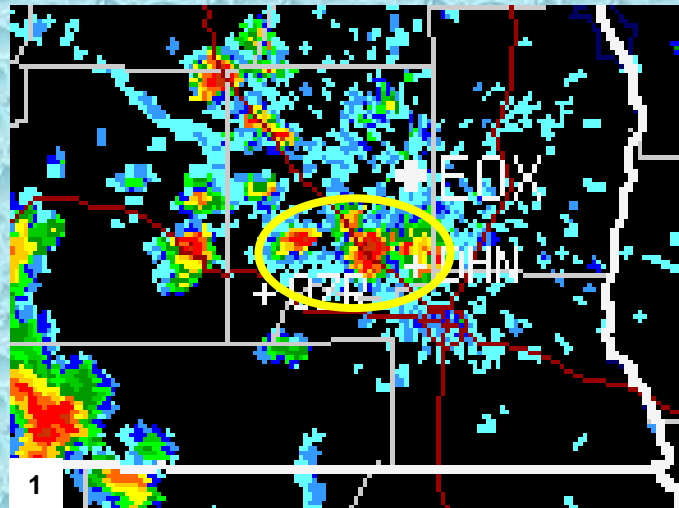


# Other Scenarios



Outflow Boundary

# Other Scenarios

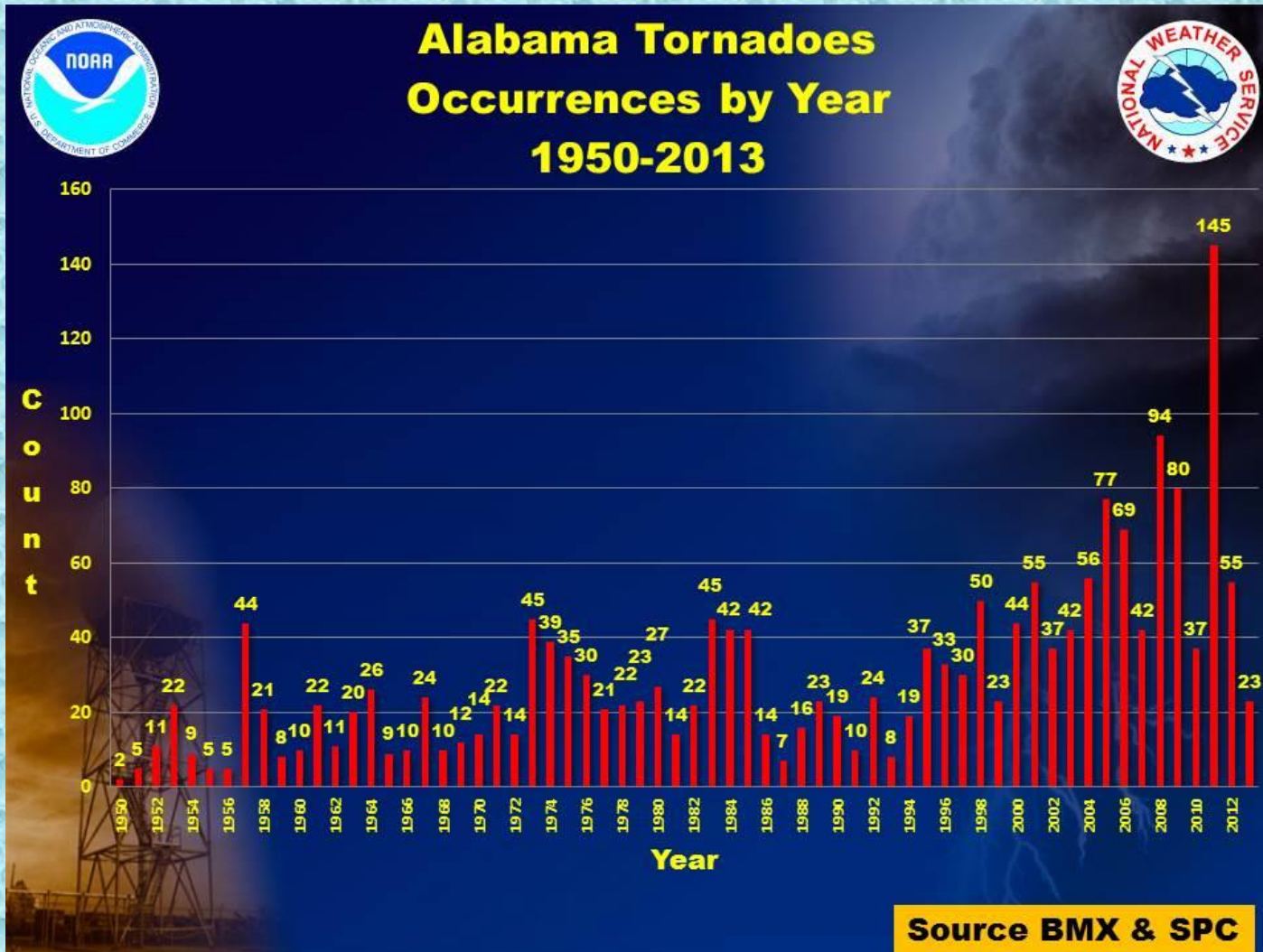


Merging Cells

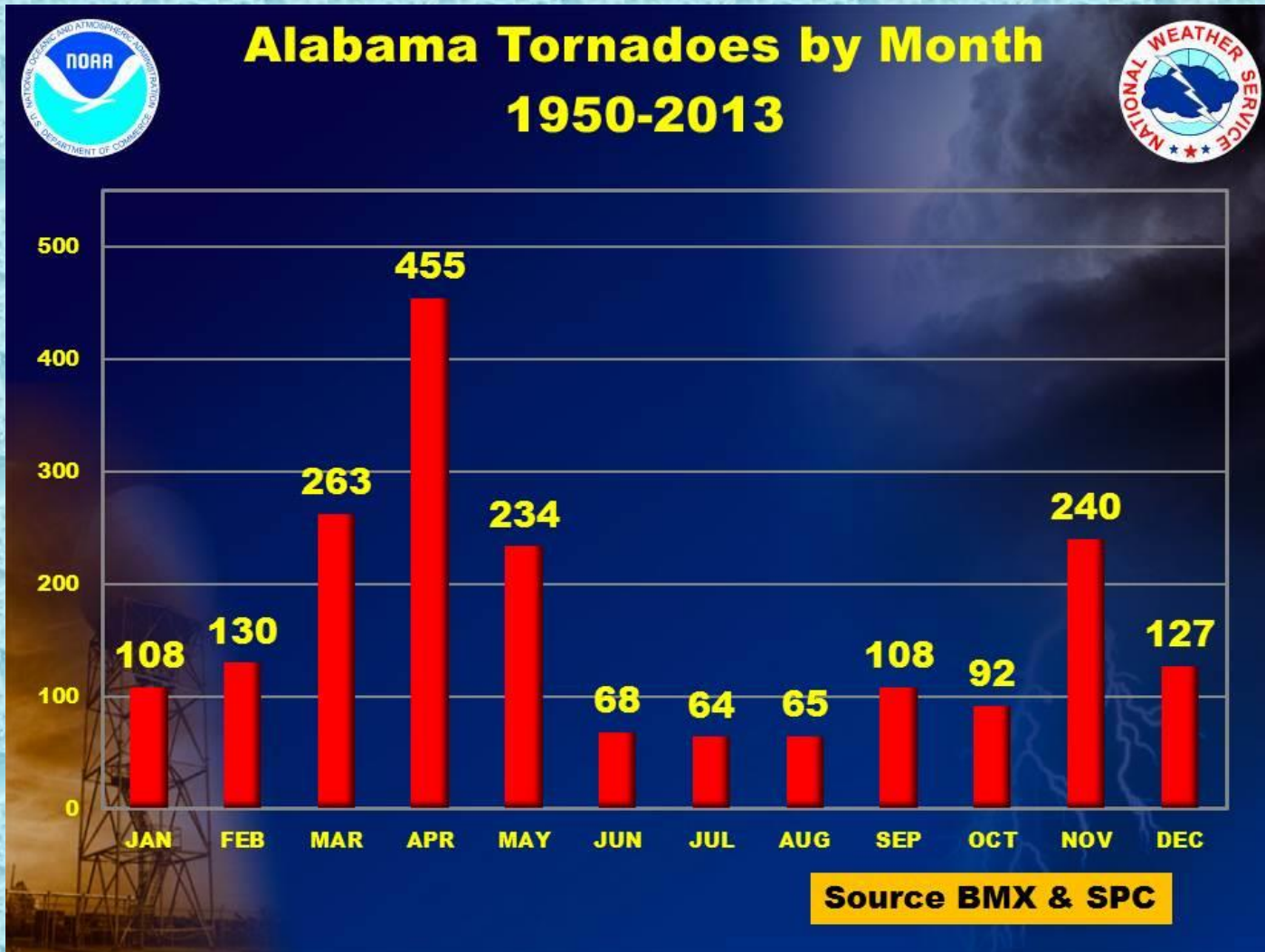
# Turbulence

- Increase in stronger winds from the west and north influence mechanical turbulence
- Frictional effects normally limited to first 3000-4000 feet
- Thermal turbulence increases throughout the season with the advent of warmer temperatures

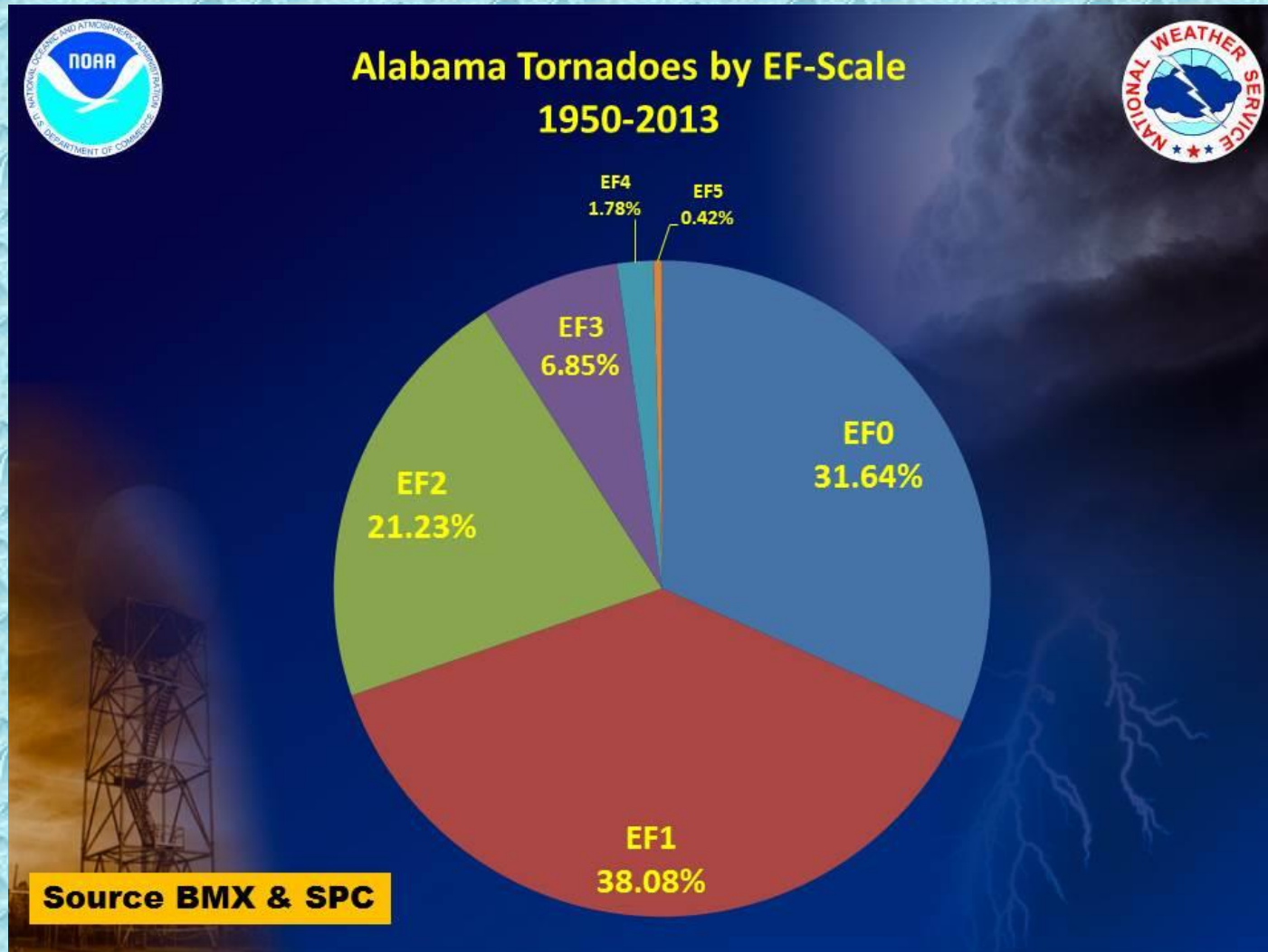
# AL Tornadoes By Year



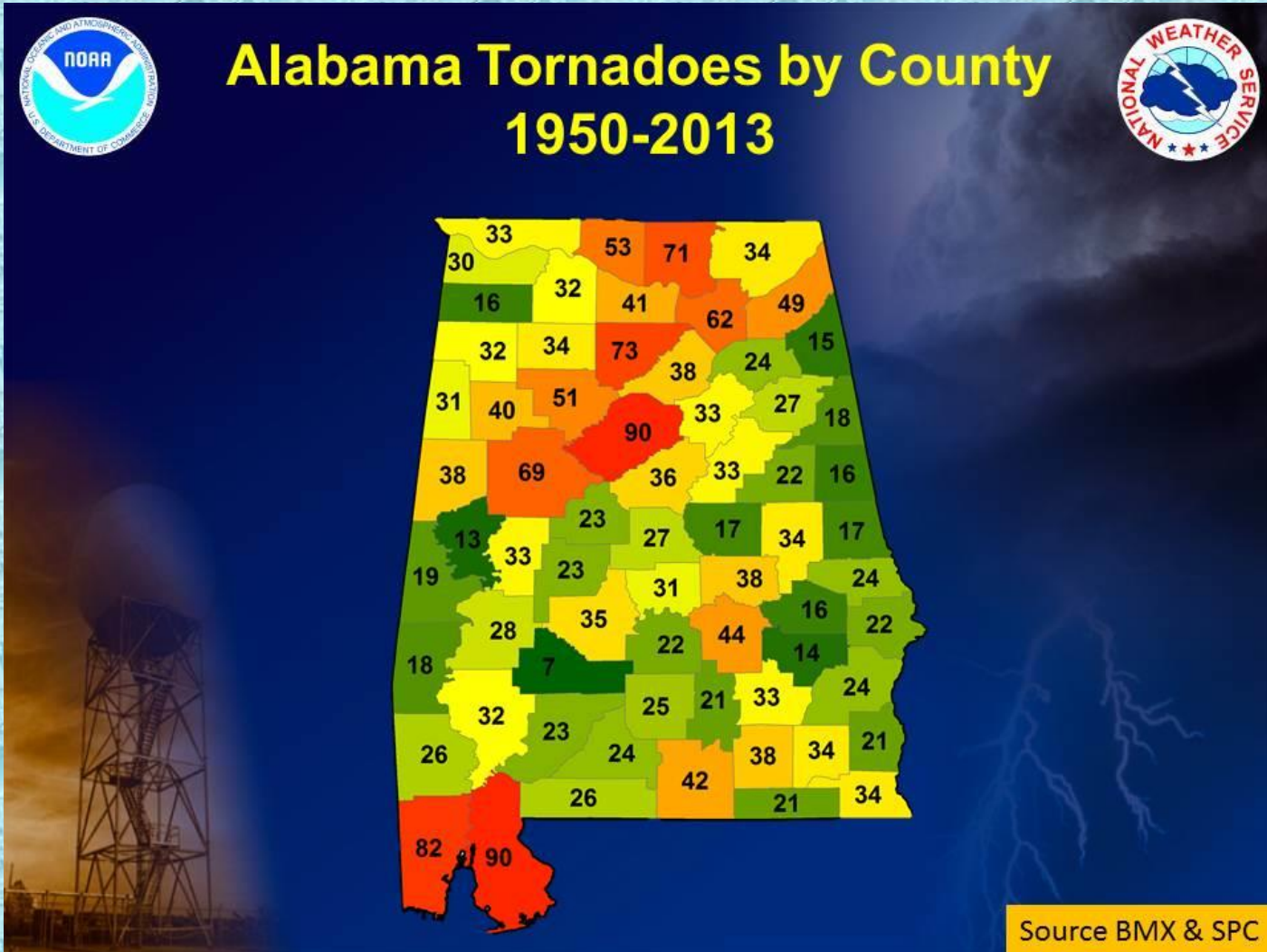
# AL Tornadoes By Month



# AL Tornadoes by EF-Scale



# AL Tornadoes By County



# Hurricanes

- 01 June - 30 November
- The official storm track and intensity provided to DoD by the National Hurricane Center
  - We cannot and will not deviate
  - Tailor to Ft Rucker

# Hurricanes: 2015 Outlook

Organization	Named Storms	Hurricanes	Major Hurricanes (Cat 3 or greater)
NOAA	6-11	3-6	0-2
Colo State	7	3	1
2014 Season	9	6	2
Average	10	6	3

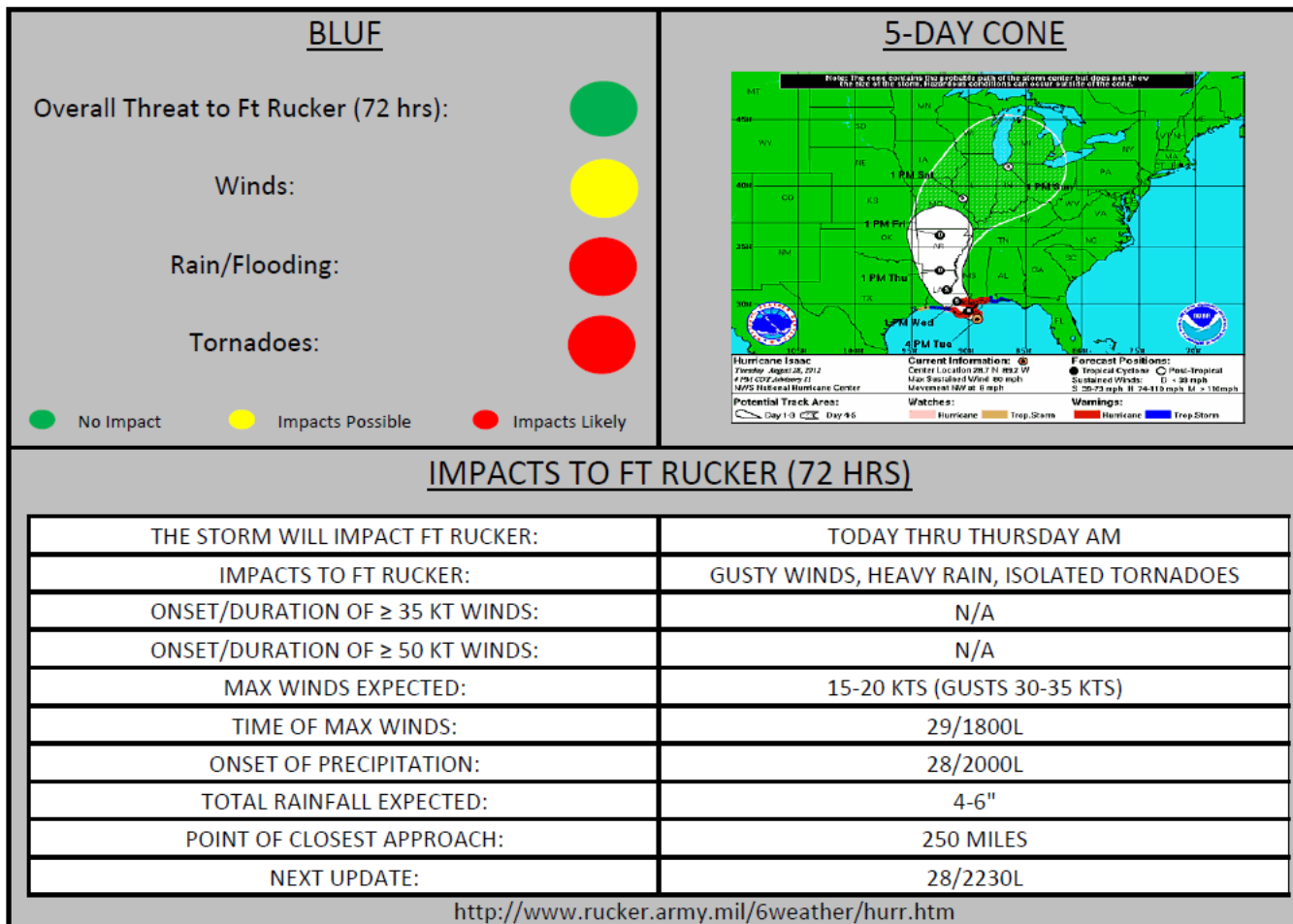
CSU predicting one of the least active seasons since 1950

NOAA predicting 70% chance of below normal season

15% chance a hurricane will make landfall along Gulf Coast  
(avg is 30%)

# Hurricanes

## 28 AUG 12 - HURRICANE ISAAC - 1630L UPDATE



Weather Happens.....

Are YOU prepared?

# Contact Info

- ➔ <http://www.rucker.army.mil/6weather>
- ➔ "Like" us on Facebook
- ➔ "Follow" us on Twitter
- ➔ Grab our App
- ➔ 255-8385/8397
- ➔ 134.1 (PMSV) or 348.8 (WIF)

QUESTIONS?

COMMENTS?

FEEDBACK?



SUGGESTIONS?

THOUGHTS?

RECOMMENDATIONS?

IDEAS?